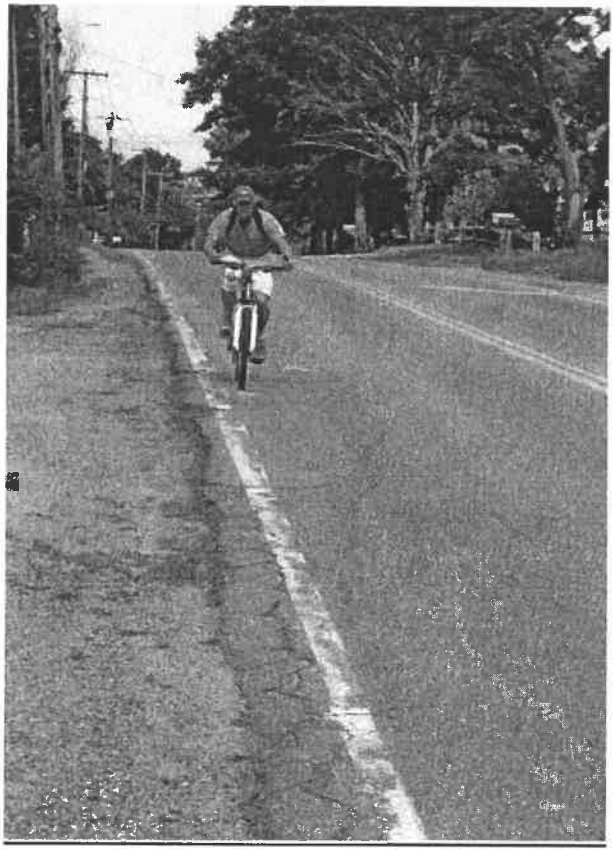
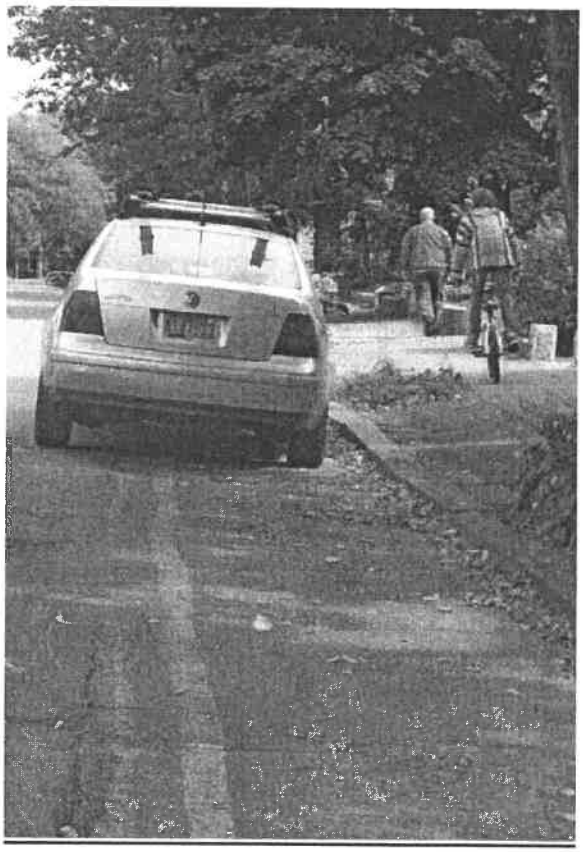
TOWN OF IPSWICH
NON-MOTORIZED TRANSPORTATION PLAN

An Action Plan to Support Bicycle and Pedestrian
Access and Safety in Ipswich

October 2009





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EXECUTIVE SUMMARY

The Town of Ipswich, along with most coastal towns on the North Shore, is an excellent place for scenic bicycling and walking. The Town has several destinations for recreational bicyclists, such as Crane Beach, Bradley-Palmer and Willowdale State Parks, and Great Neck. Recreational walkers are supported by amenities such as a Walking Tour map of historical houses in the Town Center, and a Trails Guide showing walking and hiking paths in the entire Town area.

The Town infrastructure in general does not adequately accommodate bicycling and walking as modes of transportation. Although the culture of the community places a high value on environmentally sensitive practices and active lifestyles, the facilities necessary to make bicycling and walking safe and convenient ways to reach destinations are lacking. For instance, sidewalk connectivity is poor, and best only in the Town Center. Many sidewalks are in deteriorating condition, are not adequately sized, or exist only on one side of the street, with walking destinations on both sides.

On-street cycling conditions are dangerous along many of the Town's popular cycling routes and present particular hazards for children who ride their bikes to school. Despite the challenging conditions, cyclists abound in and around Ipswich when the weather is fair, thanks to excellent scenic and recreational resources, and to welcoming conditions on some of the regional arterial roads. Kids continue to ride their bikes to school despite unsafe conditions and poorly maintained and located parking. Improving the cycling conditions throughout Town will not only address safety concerns for all users, it will encourage more children and adults to travel by bike for both utilitarian and recreational purposes. The environmental and health benefits of increased use of non-motorized modes are well established and cannot be understated. The deleterious effects of automobile dependency on congestion, air quality, and global atmospheric stability are similarly established.

The poor existing conditions in Town persist due in part to the lack of street design standards or regulations that over time could have more effectively governed the safe and equitable design and function of one of the Town's greatest assets; the public right of way. Many of the improvements to bicycle and pedestrian facilities could be achieved through the adoption of general design standards, a Selectboard policy governing the inclusion of such facilities in new transportation projects, and location specific modifications to the ways roads are striped, re-built, and regulated. Many of these changes will require little to no cost while some will require more costly investments. Whether or not these improvements are pursued will of course depend on economic feasibility, but such improvements need to be identified so that they can be realistically assessed.

The importance of actively supporting bicycle and pedestrian accessibility in Town through improved facilities seems to be a widely held position with growing traction. It is a central objective of the 2003 Community Development Plan and one of ten priority policy goals adopted by the current Board of Selectmen. A growing local road and mountain cyclist presence continues

to advocate for local improvements, and legislative leaders, the public works department, and the Office of Planning and Development have all called for a comprehensive plan to guide the improvement of non-motorized transportation facilities.

This plan describes existing conditions for cycling and walking in Ipswich and outlines recommendations for substantially improving these conditions. Recommendations are outlined in the three complementary areas of Physical facilities, Policy and planning, and Programs.

1. INTRODUCTION

Why does Ipswich need a plan specifically concerned with bicycling and walking? It fits with the Town's character and culture to improve conditions for bicycling and walking. Ipswich is described in the Town Character Statement as a "traditional New England town with a highly developed town center surrounded by rural landscape and residential neighborhoods…exceptional river and ocean views and extensive open space. The Massachusetts Department of Conservation and Recreation (DCR) has officially recognized Ipswich's scenic and environmental significance to the state. The many preserved and protected lands in Ipswich provide open space and critical habitat, and provide residents and tourists with numerous recreational opportunities."[1] In 2000, Ipswich residents expressed their desire to preserve these aspects of the Town's character by approving a $10 million bond for land acquisition and preservation of open space. These investments in public lands and scenic vistas are best appreciated on foot or by bicycle and should be accessible by these modes if possible.

In addition to enhancing access to recreational resources, a plan is needed in order to successfully support the growing interest in environmentally sustainable transportation and active living for personal health, and to create a safer, more walkable and rideable community that is friendly and welcoming to tourists who support the local economy.

There are several practical benefits to this plan. First, bicycle and pedestrian facilities were not considered and included when Town roads were first designed and built, frustrating the use of these modes for everyday transportation today. Some roads have been improved to accommodate bicyclists and/or pedestrians in recent projects, but there is no comprehensive inventory or evaluation that helps identify safety and maintenance needs for the multiple users on the roads today. Secondly, as both the traffic volume on Ipswich's roads and the number of school-aged children in the community has increased, so has the potential for accidents. Safety is increasingly an issue for children bicycling or walking to school, and playing in residential areas which lack sidewalks. At the same time we are recognizing the environmental and health benefits of replacing short-distance car trips with biking and walking, especially for school children. Third, although the Town has invested considerable time and money in developing an enviable network of conservation areas with public access trails, and boasts a regional Visitor's Center, signage and linkages between these visitor-friendly areas is poor, especially for those traveling by bicycle. Finally, no formal process exists for evaluating non-motorized transportation needs and ensuring that they are accommodated to the extent feasible when existing roads are rebuilt and resurfaced.

1.1 Federal Law and Policy

With the passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the federal government clearly articulated a mandate to support and encourage bicycling and walking

[1] Ipswich Town Character Statement, 2004, page 3.

in the transportation system. ISTEA funded the first National Bicycling and Walking study, which resulted in a report setting goals of "doubling the current percentage of trips made by bicycling and walking and reducing the injuries and deaths to bicyclists and pedestrians by 10%"[2]. In addition, it created new sources of funding for local areas to invest in the facilities necessary to meet these goals, such as bicycle and pedestrian bridges, bike lanes, crosswalk signals, and multi-use paths.

Recent civil rights law also requires that communities be accessible to all members of the community. Title 2 of the 1990 American with Disabilities Act prohibits discrimination on the basis of disability. All new facilities constructed by public entities must be free of architectural or structural barriers that restrict access to those with disabilities, particularly those using wheelchairs. The Disability Act Accessibility Guidelines are a set of technical design standards developed to help communities with compliance; the Massachusetts Architectural Access Board has also published standards (521 CMR). This law has helped to ensure that all new sidewalks are designed adequately, and has effectively eliminated the haphazard construction of walking paths that are still visible today along side many of the roads in Ipswich.

A renewed and burgeoning interest in the practical, environmental and health benefits of cycling has spurred a renaissance in federal bicycle advocacy and planning around the state and throughout the country. The 2005 reauthorization of federal transportation funds under SAFETE-LU, originally established by ISTEA, included a $100 million non-motorized transportation pilot program aimed at evaluating the benefits of dedicated bicycle and pedestrian investments. The program has been successful in four different communities and a significant expansion of federal funding for non-motorized transportation is expected in the next authorization of transportation funds. The state's regional planning commissions and MPOs will likely help administer these funds, and the existence of a comprehensive bike and pedestrian action plan may help position Ipswich to take advantage of the growing federal investment in cycling.

1.2 State Law and Policy

Massachusetts' state code regulating public ways was updated in 1994 to explicitly address improving the state's transportation system to accommodate bicycles and pedestrians. MGL C.90E §2A directs the MassHighway commissioner to "make all reasonable provisions for the accommodation of bicycle and pedestrian traffic in the planning, design, and construction, reconstruction or maintenance of any project undertaken by the department."[3] New language regulating the rights and responsibilities of bicyclists was added to MGL C. 85 § 11B, stating, "Every person operating a bicycle upon a public way…shall have the right to use all public ways

[2] US Department of Transportation National Bicycling and Walking Study report, 1994.
[3] MGL Chapter 90E, Section 2A. The regulation continues, "Such provisions that are unreasonable shall include, but not be limited to, those which the commissioner, after appropriate review by the bicycle program coordinator, determines would be contrary to acceptable standards of public safety, degrade environmental quality, or conflict with existing rights of way."

in the commonwealth except limited access or express state highways...and shall be subject to the traffic laws and regulations of the commonwealth and the special regulations contained in this section..."[4] It goes on to define bicycles as vehicles and regulate their operation. On January 15, 2009, after eight years of advocacy by an organized cyclist community, Governor Deval Patrick signed the Bicycle Safety Bill into law, which among other things, adds legal protection for cyclists who choose to ride to the right of other traffic[5].

MassHighway developed a state-level bicycle plan that was adopted in 1998. It set forth a vision for the state, "The vision of the Statewide Bicycle Plan is recognition of the bicycle as a viable means of transportation and reasonable accommodation of the needs of bicyclists in policies, programs, and projects."[6] In 2005, a Bicycle Pedestrian Committee was appointed to advise the state agency on policy, planning, and design to help make this vision a reality. As a result, the plan was substantially updated in September of 2008 and was presented for review at the first annual state bicycle and pedestrian conference held in the fall of 2007. Since then bicycle planning has continued to be prioritized by the state and by many municipalities. The Metropolitan Area Planning Council recently administered a grant program to help municipalities purchase bike racks, and in June of 2009 Ipswich installed 12 of these to improve bike parking at schools and around town. Regionally, Boston has emerged as a national leader in bike policy after years of inaction, and the MBTA has begun to improve bicycle access on trains to the North Shore as well as parking at stations around the city.

Perhaps most importantly, from a local implementation perspective, in 2006 the Massachusetts Highway Department released its *Project Development and Design Guidebook*[7]. This design guide has won multiple national awards, and was a direct result of former Governor Mitt Romney's "Communities First" policy. The Design Guidebook replaced the 1997 *Highway Design Manual* and substantially altered design requirements so as to give communities more flexibility in designing local projects. The new Guidebook has removed rigid design standards and now allows for significantly greater flexibility in design requirements, particularly for lane and shoulder widths. These flexible standards are covered in detail in Chapter 3, Recommended Actions.

The new Guidebook reflects the latest methods for encouraging and supporting safe travel for bicyclists and pedestrians, and reflects the value of community context in informing road design.

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[4] MGL Chapter 85, Section 11B.

[5] Among the many changes the new law makes, it requires police training on bicycle law and dangerous behavior by bicyclists and motorists; explains how a motorist should safely pass a bicycle; explains how a motorist should safely make a turn in front of a bicycle; makes "dooring" (opening a car door into the path of a bicycle or other vehicle) subject to ticket and fine; permits bicyclists to ride two abreast when it does not impede cars from passing; and adds legal protections for bicyclists who choose to ride to the right of other traffic.

[6] Massachusetts Highway Department Statewide Bicycle Plan, 1998.

[7] The Massachusetts Project Development and Design Handbook was released in January 2006 and is available at http://www.mhd.state.ma.us/default.asp?pgid=content/designGuide&sid=about#para4

This guidebook is a valuable resource for Ipswich planners, engineers, consultants, public works officials, and community advocates alike. It establishes a meaningful basis for decision-makers to make informed departures from default engineering and design standards that have not necessarily best served the multiple functions of the Town's roads or their historic context. A central principle of the guidebook is multi-modal consideration.

> *"This guidebook takes the approach that non-motorized transportation modes are fundamental considerations in the design process. As such, pedestrian and bicycle design requirements within a shared right-of-way are integrated throughout the design chapters...It is the policy of EOT and the Commonwealth to encourage designers and decision-makers to fully consider these modes of transportation throughout the planning, design, and construction phases of a transportation improvement project."*

The guidebook *must* be followed whenever MassHighway is the proponent of the project, is responsible for project funding, or controls the infrastructure. In Ipswich, this means that all projects along State routes 1A, 1, and 133, as well as all projects that are funded through the MPO must be compatible with the principles and guidelines set forth by the state.

1.3 Ipswich Transportation Policy and Planning

In 2003, Ipswich adopted a Community Development Plan defining a set of goals for the Town's transportation system. Describing the Town as a little "off the beaten path", it is clear that the narrow, two lane roads are integral to the Town's character. The Plan states, "The community also values its access to non-automotive modes of transport, such as the Commuter Rail, and has made a concerted effort to build and link a network of pedestrian and equestrian paths that provide circulation as well as recreation benefits."[8] It suggests that the town should "pursue small-scale road projects that focus on improving problem intersections or road segments....another major goal is to enhance non-motorized transportation options by developing and designating pedestrian and bicycle trails and routes."[9]

The Town's 2004 Character Statement further refined this vision for Ipswich and gave specific recommendations for its corridors. "The character of Ipswich is shaped significantly by its corridor roads, which include High Street, Linebrook, Topsfield, Essex, Jeffrey's Neck, Argilla, and County Roads."[10] It goes on to say that these roads share certain distinctive and valued characteristics, including, "a strong picturesque setting with woodlands and panoramic views of open space...Physical features along the corridors include stonewalls, historical houses, farm buildings, and natural environments."[11] The Character statement offers some guidelines for preserving these roadways, which display Ipswich's unique historic, natural, and rural characteristics. It recommends protecting long and short views, buffer areas, and cultural

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[8] Ipswich Community Development Plan, 2003, page 10.
[9] Ipswich Community Development Plan, 2003, page 10.
[10] Ipswich Town Character Statement, 2004, p. 29.
[11] Ipswich Town Character Statement, 2004, p. 29.

resources, and improving the design and appearance of commercial establishments to better integrate with residential areas.[12]

The Community Development Plan describes five key issues the Town must deal with to meet its transportation system goals. These issues represent factors that will shape the future of Ipswich – areas where the decisions made will either enhance or endanger the Town's character. Two of them are concerned with preserving the Town's bicycle and pedestrian-friendly character:

> **Issue #1: Making Transportation Systems Compatible with Ipswich's Character**[13]
> *Ipswich's existing transportation network – with its many narrow and rural roads – contributes greatly to the Town's character. These character-defining features can be preserved and enhanced through deliberate planning and policies. On the other hand, there are a few sections of Town where automobiles have dominated to such an extent that the area is no longer safe or pedestrian-friendly. In these instances, corrective measures may be necessary to restore the desired balance between vehicular mobility, roadway character, and pedestrian safety and comfort.*
>
> **Issue #2: Supporting Non-Automotive Transportation Modes**[14]
> *In many regards, Ipswich is well-suited to walking and bicycling as modes of transportation. The Town has a compact downtown where residences, shops, places of employment, schools, and the commuter rail station are all located relatively close to one another. Even outside the town center, many of the roads are safe and pleasant for bicycling, and some are also safe for walking. Additional efforts to knit together the components of the Town's non-automotive transportation infrastructure can further promote walking and bicycling as viable modes of transport.*

Having defined potential problems facing the Town's future, the Plan proposes five policies to guide decision-making, planning and investment:

1) Provide for safe and efficient roadways through limited infrastructure projects and by adopting regulations for new developments.

2) Continue to develop the Town's transportation systems in a way that is compatible with the Town's character.

3) Support non-automotive transportation modes including cycling and walking.

4) Make the best use of existing parking downtown and provide additional parking, if necessary, to support downtown activities. Ensure that the Town's parking requirements are adequate for and consistent with the types of development that the Town would like to attract.

5) Consider transportation factors when making decisions related to issues such as planning, zoning, open space protection, and the siting of public facilities.

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[12] Ipswich Town Character Statement, 2004, p. 30.
[13] Ipswich Community Development Plan, 2003, page 55.
[14] Ipswich Community Development Plan, 2003, page 57.

Finally, the Community Development Plan presents a Transportation Implementation Plan articulating a set of 21 action steps[15], which is included as Appendix A in this document. Several items would directly improve conditions for bicycling and walking, as shown in the Table 1-2, ranked in the order of importance they are given in the Plan.

Table 1-2
Summary of Actions Identified in Ipswich Community Development Plan[a]

Action Step	Importance	Plan Item #
Sidewalk Construction	High	T3-3
Support Bicycling	Medium	T3-2
Trail System	Medium	T3-1
Traffic Calming Techniques/Reduced Pavement Widths	Medium	T2-1

[a] *More detailed descriptions of these items may be found in Appendix 1 of this document.*

1.4 Actions Taken To Date

As of October, 2009, Ipswich had already begun the process of making the town center more friendly and safe for bicycling and walking. A significant investment was made to re-pave sidewalks and improve traffic flow on Market and Central streets in 2004. The effort included investment in aesthetic improvements to the streetscape and façades. This effort was led by the Ipswich Downtown Partnership and funded through the federal Main Street preservation program. Though the sidewalk improvements were a good measure, the surfacing materials have deteriorated substantially over a short period of time, and cycling conditions have not been improved through signage, striping, or resurfacing.

The Riverwalk path and pedestrian bridge across the Ipswich River, completed in 2005 have also significantly improved pedestrian access to the river and between downtown and the visitor's center on South Main Street. Significant improvements to the sidewalk network have also been made along Green Street, County Road, and Summer Street. These improvements have significantly improved access to Town Hall and to the athletic fields on Green Street. The addition of a four-way stop at the intersection of Green and County has calmed traffic approaching the intersection and has enhanced pedestrian safety in the area.

The entire length of Essex Road in Ipswich, from the border in Essex to the intersection with County Street was re-built in 2009, and an ADA compliant sidewalk was added along the northeast side of the road. This sidewalk sees regular use now, and the improved road surface has attracted recreational cyclists in great numbers.

[15] An implementation matrix with the full Transportation Implementation Plan may be found in the Ipswich Community Development Plan, page 51. It is also included as Appendix A in this document, along with text from the Plan describing each action step in greater detail.

In June of 2009, 12 bike racks were installed in several downtown locations, at two schools, and at the Strawberry Hill conservation area trailhead. These racks were funded by the aforementioned regional bike parking grant and represent an important element of the non-motorized system; parking.

A section of Argilla Road was repaved in 2008, and efforts were made to provide slightly more shoulder space for cyclists along this popular and scenic route which leads out to Crane Beach. Resident cyclists informally requested these improvements from the DPW, and all agree that the conditions are better now than what they had been. However, it is important to note that these improvements came about through an informal process and represent marginal improvements, and not necessarily a comprehensive approach to facility specific bike planning. This type of collaborative arrangement, although productive, places a significant burden on the DPW and the community of cycling advocates to negotiate solutions on a case by case basis. In doing so, it puts the DPW in a difficult position of having to make adequate improvements or deny the requests of the community. The specific conditions on Argilla Road and elsewhere are described in detail in Chapter 2, Existing Conditions. Recommendations for formalizing a process to inform road improvements are outlined in Chapter 3.

Lastly, the Board of Selectmen adopted a set of priority Goals in 2010[16]. One of the stated goals is to "*create a comprehensive road management program to include road resurfacing, utility replacements, sidewalks, crosswalks and bike paths.*" The creation of this non-motorized transportation plan is in direct support of that goal. It includes recommended actions in Chapter 3 which address not only physical improvements to facilities, but necessary steps to establish a successful management plan. Another of the Board's stated goals reads, "*Sustainability: All municipal departments will promote policies and programs that reduce the consumption of natural resources.*" The objectives of this goal were enumerated in an outline which was adopted by the Board of Selectmen and the Town Manager on December 10, 2008, and they include the statement, "*Building sidewalks, paths and bicycle-friendly lanes to promote alternative transportation throughout the town.*"

[16] This list of goals can be found in Appendix B, and on the Town's website at: http://www.town.ipswich.ma.us/selectmen/pdf/FY10%20Selectmen's%20Goals.pdf

2. EXISTING CONDITIONS

This chapter describes the existing conditions in Town that are contributing negatively toward a safe and effective non-motorized transportation network. It is important to note that all communities suffer from challenging conditions in one place or another. There are many factors that contribute to shaping the layout and use of the present day right of way. Much of this has to do with historic road layout, existing infrastructure (which is hard to move), and prevailing uses and methods of management. Because the existing conditions are really an amalgam of years of planning (or lack thereof), policy, and materials, appropriate solutions will vary considerably from facility to facility and will depend on multiple considerations. These will be discussed in detail in Chapter 3.

Just as the factors that contribute to the existing conditions are complex and layered, so are some views as to what acceptable conditions amount to. Some users may not perceive a problem with the way any given roadway functions, while others feel unsafe on the same road. For the purposes of this plan, existing conditions are assessed in terms of the adequacy with which the facilities within the right of way serve the multiple users. The principles of multi-modal transportation planning, and those highlighted in the Massachusetts Highway Development and Design Guide, as well as the policies adopted by the Board of Selectmen all create a reference for evaluating the current conditions, and for developing appropriate solutions that will more safely and effectively accommodate multiple users.

Reported Collisions
- **Pedestrians**
- **Bicyclists**
- **Locations of Concern**

Pavement Width and Available Space
Lane and Shoulder Width
On-Street Parking
Drainage Grates
Roads of Concern
Signage
Bike Parking and Multi-modal transportation

2.1 Reported Collisions

This section contains crash data recorded by the Ipswich Police Department covering the fourteen year period from1996-2009[17]. Crash data are an unreliable measure of safety because a number of crashes are unrelated to the conditions of facilities, and because the majority of crashes go un-reported. Crashes are not the only measure of safety, but the longitudinal data can be a useful indicator of trends, and can be compared to future data as a way of qualitatively evaluating improvements. For this reason, it may be useful to present available data.

[17] Data provided Ipswich Police Department in 2005 and 2009. Since this document was completed in September 2009, it does not represent a full year. However, since reported pedestrian and bicycle crashes are relatively infrequent (about 6 per year) they are presented as complete within an acceptable margin of error.

A "crash" is when a collision occurs between a vehicle and a bicycle or pedestrian. Bicycles are defined as vehicles under state law, and cyclists are considered operators with the same rights and responsibilities as operators of other vehicles. This analysis *helps* identify those roads and intersections with the highest rate of reported crashes. Crashes, however, involving bicyclists or pedestrians are unlikely to be reported to police, especially when neither party has sustained an injury or property damage. It remains very difficult to estimate how many unreported crashes occur for each crash that is reported.

This analysis also reveals that bicycle and pedestrian crashes are more frequent at certain times of the year, as shown in **Table 2-1**. Crash reports were made most frequently in September, which may be correlated with the school calendar. There were no bicycle crashes reported in February during the entire period. Since 1996, of the 85 crashes reported, roughly 60% have been pedestrian crashes and 40% bicycle crashes. Since data such as time of day and the age of the injured party are not collected, it is difficult to determine other important factors which may be correlated to make certain locations more dangerous, such as visibility at night or higher traffic volumes during school drop-off and pick-up hours. However, these data are still valuable, as they can be compared to future data in the context of improved conditions, as long as data collection methods don't change.

One well established impact of increased bicycle and pedestrian traffic (resulting from improved facilities) is that crash *rates* decrease when the total number of bicyclists and pedestrians increase. The more dominant presence of bikes and pedestrians contributes to increased driver awareness, but the bikes and pedestrians exert a traffic calming effect on the roadway as well, especially the bikes. This effect is cited in the *Massachusetts Highway Development and Design Guide* as a positive impact of improved cycling conditions and increased volume of cyclists.

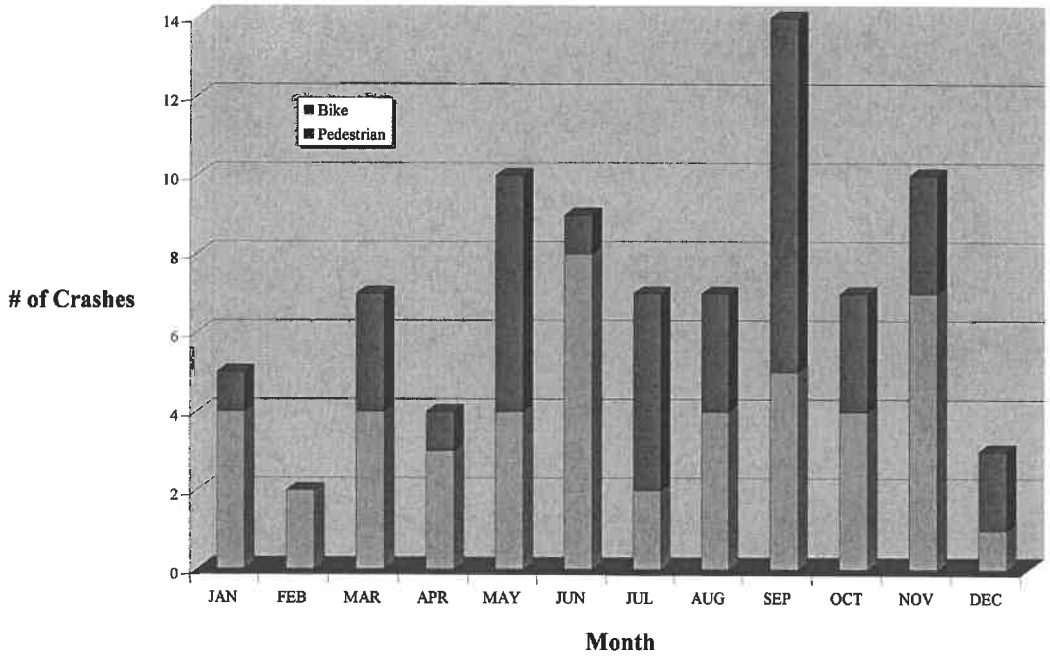
Table 2-1 Reported Pedestrian Crashes

Year	No Injury	Injury	Fatality	Annual Total
1996		3		3
1997	4	6		10
1998	1	1		2
1999	1	1		2
2000		4		4
2001		5		5
2002	2	2		4
2003	2	4		6
2004		3		3
2005				
2006				
2007				
2008				
2009		1		1
Total	**10**	**30**		**48**

Table 2-2 Reported Bicycle Crashes

Year	No Injury	Injury	Fatality	Annual Total
1996	1	1		2
1997	1		1	2
1998	3	1		4
1999	2	2		4
2000	1	1		2
2001	1	4		5
2002	3	1		4
2003		1		1
2004	1	2		3
2005	1	2		3
2006				
2007				
2008				
2009				
Total	**14**	**15**	**1**	**30**

Reported **Bicycle and Pedestrian Crashes by Month 1996-2009**



2.1.1 Pedestrians

A total of 48 pedestrian crashes were reported between 1996 and 2009, as shown in **Table 2-2**. Averaging 4 crashes per year, an injury was reported three times more frequently that not. Injuries are more likely in pedestrian crashes, due to the great difference in speeds between automobiles and pedestrians, who typically travel 2-3 miles per hour. A pedestrian is highly vulnerable to injury in any crash. Vehicle speed is the number one factor in pedestrian risk. At 20 mph the chance that a pedestrian will be killed in a collision with a vehicle is approximately 5%. At 40 mph, the chance increases to 85%[18].

2.1.2 Bicycles

Table 2-3 shows that a total of 30 bicycle crashes were reported in Ipswich between 1996 and 2005, an average of 3 per year. Reported bicycle crashes included injuries roughly half the time, and there was one fatality. This is likely because bicyclists are traveling at speeds more closely matching automobile speeds than pedestrians, ranging from approximately 8-25 miles per hour.

Unfortunately, the one fatal crash involved a child who was killed while bicycling near home on Sagamore Road. This road, beloved for its quiet rural character, is curvy, narrow and bounded by thickets of trees. Although these are highly valued characteristics, they are also safety challenges, since hills, curves, and trees or other obstacles close to the edge of the right-of-way are all factors which obscure drivers' sight lines. Increasing driver awareness and slowing vehicle speeds on such roads are critical safety considerations. The child's death galvanized the neighboring town of Hamilton to form a Road Safety Committee to study how to make such roads safer. As a result, signs with warnings such as "Slow, Children" and "Blind Driveway" have been posted along Sagamore Road and other roads with similar characteristics.

2.3 Locations of Concern

The two main factors that characterize a location of concern are 1) a destination or route that attracts a high share of pedestrians and cyclists, and 2) a location near roads with high traffic volumes and speeds. Locations with both characteristics may be described as having a high potential for conflict between pedestrian, bicycle, and automobile traffic. An address was recorded in 29 out of 40 pedestrian crash reports and 16 out of 30 bicycle crash reports. These addresses were mapped to reveal the most accident-prone locations, shown in **Figure 2-1**. The data illustrate that the locations that could be identified using the criteria above are indeed the ones with the highest rates of reported crashes. In addition to those locations shown on the map, there are other places where bicyclists must cross busy roads or intersections as part of routes linking scenic roads and natural areas.

[18] http://www.walkinginfo.org/pedsafe/crashstats.cfm

Locations of Concern Based on Crash Data

- Winthrop School
- Ipswich High School / Middle School
- Town Hall (recreational fields, youth center)
- Central St at Market St and at Hammatt St
- East St/County St corridor
- County Rd at Essex St
- Lord Square
- Bialek Park, which contains a skateboarding park, and is a destination for youth who bike/skateboard along Linebrook Rd
- Topsfield Rd between Asbury St and Perkins Row, marked "Dangerous Intersection"

Locations of Concern Based on Conditions

- Jeffrey's Neck
- Linebrook Road
- High Street (between N. Main and East St.)
- South Main and Choate Bridge

Table 2-4
Roads With High Crash Rates, 1996-2005

Road	Pedestrian	Bicycle	Total
High St	7	6	13
County Rd	5	7	12
Topsfield Rd	4	4	8
Central St	4	4	8
Market St	2	2	4
South Main St	2	1	3
Depot Square	1	1	2
Essex Rd	1	1	2

2.4 Roads of Concern

There were significantly higher crash rates on four roads: High Street, County Road, Central Street and Topsfield Road. Other roads with high crash rates are shown in **Table 2-4**. Most pedestrian crash reports were located near popular or necessary areas frequented by people on foot, such as the Market street shops, the Winthrop School and Ipswich Middle and High Schools, and the YMCA. Other areas where pedestrian crashes were reported were in the residential populous areas of town within walking distance of shops and schools, such as the residential area bounded by Topsfield Road and Washington Street. Only three crash reports with addresses were from locations outside the town center, all of them involving bicycles. One was the fatality on Sagamore Rd, another was on River Rd on Little Neck, and the third was on Linebrook Rd near Doyon School; these are shown in **Figure 5-1**.

Another set of data provided by the Ipswich Police Department helps illustrate the roads where drivers are more likely to exceed the posted speed limit. Some of these are scenic roads that are popular with recreational bicyclists. Some are preferred routes to recreational destinations such as Crane Beach, Bradley-Palmer state park, and Great Neck. Speed limits are posted for safety, based on factors such as visibility around curves and over hills, stopping distance, and potential conflicts with pedestrians. Narrow, curvy, hilly roads have lower speed limits for this reason, for example, East St. and Lakemans Lane. Straight, flat, wide roads have higher speed limits, such as Jeffrey's Neck Rd, where the limit is 40 mph. Roads of concern are those that are both popular with bicyclists and where drivers are likely to exceed the posted speed limit.

These data, shown in **Table 2-5**, reveal that drivers are more likely to exceed the posted speed limit on two types of roads, 1) low volume, scenic roads with low speed limits, and 2) high volume roads where the speed limit changes to a lower speed approaching town. **Figure 5-1** shows roads of concern in red and orange.

NOTE – This table and these conclusions are preliminary

Table 2-5
Traffic Data Collected by Stealth Radar[a], 2003-2005

Location	Volume[b]	Speed Limit	85th Percentile Speed[c]	Difference
Candlewood	Low	30	41	+11
Sagamore at Fellows	Low	30	40	+10
Mile Lane	Low	30	40	+10
East Street	High	25	34	+9
Mill Road	Med	40	49	+9
County Rd at Essex	High	35	44	+9
Pineswamp at Linebrook	Low	30	38	+8
Topsfield at Mill	High	40	48	+8
31 County St	High	25	32	+7
Argilla at County	Med	30	36	+6
Lakemans Lane	Low	25	31	+6
Essex Rd	High	45	51	+6
Linebrook at Doyon School	High	35	41	+6

[a] Stealth radar is a technique used by Ipswich police to collect data on the number of vehicles traveling on the Town's roads, as well as their travel speeds. The device uses the same type of radar that is used for traffic enforcement, but is called "stealth" because it is housed in a small, box-like unit that is attached to telephone poles to record data continuously for time periods up to 45 hours.
[b] Traffic volume, or number of cars per day, defined as follows: less than 1,000 = Low, 1,000-2,000 = Med, and over 2,000 = High.
[c] This means 85% of cars were traveling at this speed or less; the other 15% were traveling at a greater speed.

4. EXISTING CONDITIONS

During August 2005, interviews and field work were conducted to assess conditions for bicycling and walking in Ipswich. Interviews were conducted with staff at the Ipswich Department of Public Works, Police Department, Visitor Center and the Town's three public schools, as well as several concerned residents[19]. There is no method of counting and tracking the number of trips made by bicycle or on foot, nor are assets such as sidewalks and trails managed for maintenance in the same way as roads, thus much of the information presented is anecdotal or by observation.

The principal arterial roads linking the Town to other nearby towns were designed for relatively slow-moving vehicles, and many were built just wide enough to allow the passage of relatively infrequent vehicles. Extra right-of-way for sidewalks and shoulders wasn't needed. As the Town has adapted to accommodate ever-increasing numbers of vehicles moving at faster speeds, it has sometimes been difficult to add such safety features due to a lack of Town-owned right-of-way. Many facilities have been added as part of road maintenance projects, and sometimes they have been added by developers when new housing is built. **Figure 2-1** shows the existing network of sidewalks.

4.1 Pedestrian Facilities

Founded long before the automobile was invented, Ipswich was originally designed to facilitate walking as the primary mode of transportation within the town center, and so it remains. Distances between most destinations in the town center, such as the central business district on Market St and Town Hall, are a short walk apart. Most central business and civic destinations are roughly within a ¼ mile radius of the intersection of Central and Market streets. The town's most densely populated residential neighborhoods are within a ½ mile radius. Assuming 3 mph as an average walking speed, this means most business and civic destinations, and many homes, are about a 5-10 minute walk from each other.

"Pedestrian facilities" refers to the physical infrastructure that improves access and safety for those traveling by foot. They include sidewalks, trails and paths, crosswalks, traffic signals, corner curb cuts, bridges, signs directed at drivers, wayfinding signs, and devices intended to reduce automobile speeds (traffic calming).

The town center has excellent sidewalks and crosswalks, some of which were installed quite recently, for instance on Market and Central streets. Access to the commuter rail station is facilitated by sidewalks and crossings on Market St, and a trail linking to Estes St. Several trail systems are linked together, forming an excellent network of walking trails. Recently, the Essex County Trail Association published a superb map Trails Guide showing walking, hiking, horseback-riding and skiing trails open to the public. The Visitor Center plays host to many who desire a walking tour of the historic areas of town, and provides several Walking Tour publications. There is even an organization dedicated to leading such tours, the Olde Ipswich Tours organization, which organizes elderhostel tours, among other activities.

The Riverwalk, a major facility designed primarily for pedestrian use, has added connectivity recreational to the town center as well. It includes new trails along the Ipswich river and a new bridge across the river, serving to link the commuter rail and Market St areas with the civic and historic destinations along South Main St and Elm St. Long-term plans for this route are a new theatre/entertainment center on Elm St, and a new parking structure for public use in the evenings on Estes St. It is anticipated that pedestrian traffic will increase significantly upon completion of these three projects. Walkers will need to cross South Main St just past where it makes a sharp curve of nearly 90 degrees which blocks north-bound drivers from seeing people crossing. This presents a future safety problem area.

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[19] See the Acknowledgements section for a list of people whose comments contributed to this document.

Problem areas

- High St sidewalks between East St and Lord Square are terrible disrepair; sporadic on north side. Visitors are directed to this area to see the high concentration of historic homes.
- Two crashes were reported near Topsfield Rd and Fairview St, an area bordering a dense residential neighborhood. There is a curve in Topsfield Rd near this point blocking drivers' ability to see pedestrians crossing.
- Linebrook Rd has significant residential development near Pins Swamp Rd and high traffic volume, and has signs warning drivers to watch for children, yet has no sidewalks at all.
- On peak days at Crane Beach, many people park at the Castle Hill Estate and walk in or alongside the roadway to the beach. There is no path, trail, or sidewalk buffering walkers from cars.

4.2 Bicycle facilities

The same characteristics that make Ipswich such a walkable place also mean it is a great place to use a bicycle for transportation. The great majority of the town's commercial destinations are within 1 mile of the densest residential areas. Bicyclists typically travel at 7-14 mph, so assuming an average bicycle speed of 12 mph, most destinations are about a 5 minute ride. The scenic vistas that define the Town's character make it a wonderful place for recreational bicycling.

"Bicycle facilities" refers to physical infrastructure that bicycles may use, or that improves safety for cycling. This includes most physical infrastructure available to cars, except for highways and parking spots, and other facilities specifically designed for bicycles. Such facilities range from on-street bicycle lanes, off-street bicycle trails, wide shoulders on roads (32" or more), bike-sensitive traffic signals, signs directed at drivers, wayfinding signs, and bicycle racks. There are two main types of facility used by bicyclists in Ipswich - the road system, shared with cars, and the trail system, shared with pedestrians and horses. Some trails in Bradley-Palmer and Willowdale are paved, but others are unpaved "single-track" suitable for mountain bikes.

Ipswich's excellent scenic roads and miles of single-track trails make it a regional destination for bicyclists. Many recreational cyclists pass through the town as part of longer rides between several towns. On summer weekends, dozens of mountain bikers who drive to the area may park at trailheads at Bradley-Palmer and Willowdale. Bicycling is also a popular mode of transportation for those going to Crane Beach, where there may be 30 bicycles parked on a peak summer day. Bicycling is also a popular family activity along low traffic roads and in Bradley-Palmer. Many of the Town's conservation and open space resources are located with access on scenic roads, popular with cyclists. Trails at the Hamlin Reservation, Dow Brook Conservation area, Linebrook Woods, Strawberry Hill, Willowdale Forest and Bradley Palmer State Park, as well as the open stretches of Crane and Pavilion Beaches are all accessible by bike.

Problem areas:

- No shoulders and cracked edges along northbound Central and High streets.
- There are no bicycle racks in Ipswich, except for one located at the Commuter Rail station, and three at Crane Beach.
- Where the commuter rail tracks cross roads, particularly at an angle greater than 30 degrees, the wide cracks in pavement alongside the tracks are a hazard for bicycles, especially when wet.

4.3 Schools

Managing traffic flow is a major problem at all schools. Special areas are set aside at each to route cars dropping off and picking up students, to keep them out of the path of the buses and the children walking to and from them. In the case of the middle school, where a higher share of students are driven in cars, parents have learned to stagger their trips over the half-hour before and after school in order to avoid peak traffic congestion. Shown in **Table 4-1** are the percentages of students who are bused and who are dependent on alternate means of transportation. The latter represents the pool of students who either walk or bike, or who generate automobile-trips contributing to traffic congestion on Central and High Streets[20]. Some students who are eligible for busing are driven by parents instead, which also contributes to traffic congestion at the schools. Encouraging more students to walk or bike is one solution to this problem, but should not be done unless facilities are considered safe.

[20] Except for pre-school students, who are not old enough to use bicycles or walk independently. Parents or siblings could accompany these children walking to school, however, they are omitted from this table under they assumption that they all will arrive and leave the schools by car.

Table 4-1
Estimated Mode Split of Ipswich Students (2005)

School	Students	Bus	Non-Bus	Car[b]	Walk	Bike	Other[c]
Winthrop Elementary	470[a]	270	200	75 (16%)	100 (21%)	15 (3%)	
Doyon Elementary	450[a]	440	10	40 (9%)	7 (1%)	3	
Middle / High School	1,200	300	900	60 (5%)	100 (8%)	40 (3%)	15 (1%)
Total	2,120	1,010	1,110	175	207	58	
Percentage		48%	52%	8%	10%	3%	

Source: These estimates were given anecdotally in interviews with each school's Assistant Principal, who is responsible for greeting students at the main entrance in the morning. They are named in Acknowledgement section.
[a] Excluding approximately 30 pre-school students
[a] Excluding cars transporting pre-school students, high school students who park on campus, and including students who are eligible for busing but are dropped off by parents
[c] Including skateboards, scooters, and roller-blades

Winthrop Elementary

Winthrop Elementary is a walkable destination for the majority of students who live within the one mile radius where busing is not provided. Last year, the school enrolled approximately 500 students in five grades, plus about 30 pre-school students. Buses were not an option for about 200 students, including the pre-schoolers, who are dropped off and picked up by their parents every day. An estimated 70 cars visit the school twice each day to pick up and drop off students, which may double on rainy days. It was estimated that about 100 students walk to the school, about half of them independently and half accompanied by adults. The rear of the school is fenced off such that students must enter from the front, however some students approach on foot from Mineral St or Manning St rather than Central St. Some of these students are dropped off by parents on those streets. An estimated 15 use bicycles, although that dropped significantly during winter months.

The speed limit on Central St in front of the school is 25mph, so cars are already traveling close to the 20mph School Zone standard. The main issues for students are being visible to drivers and gaining priority to cross the street. There is a crosswalk with a pedestrian-activated signal and flashing lights in front of the school. Priority for crossing students is further enforced by the presence of a uniformed crossing guard, sometimes a police officer, assisting students at the crosswalk in front of the school.

A School Safety committee was formed several years ago to address the severe problems with traffic congestion and potential conflicts between students and vehicles. This committee, which includes the Winthrop Elementary Principal, Ipswich Police Chief, and Director of Public Works, has focused on several issues of concern to parents and public officials alike. For instance, parents dropping off children would park too close to the Mineral St and High St corners, blocking visibility for turning drivers and crossing children. Some parents, in too much of a hurry to cross Central St at the signalized crosswalk, jaywalk with their children through oncoming traffic. A new drive was recently installed through the front lawn of the school to re-route parents' cars to a new drop-off area, solving long-time traffic problems created by cars exiting behind the fire station and turning on to Manning St and then Central St.

One complaint made by parents is that in the winter, unshoveled sidewalks force children to walk in the street.

Doyon Elementary

Located in a largely rural and undeveloped area on Linebrook Rd, over a mile from the Town center, Doyon Elementary is a severely lacking in pedestrian and bicycle facilities. However, with few residences within the one mile radius where busing is not provided, there are rarely more than a dozen students walking or biking to school. The school does not have a bike rack, so the 3 or 4 students who ride store them in the lobby or an area out back visible from the teachers' lounge. These students are known to use trails in Willowdale Forest, which borders the rear of the school; no students ride their bikes on Linebrook Rd.

Heading west from town toward the school, Linebrook Rd has a sidewalk only its southern side, which becomes intermittent past School St., and switches to the northern side at Mile Ln. There are no sidewalks on Linebrook Rd past the school. Students approaching Doyon from the north use a crosswalk in front of the school that does not have a crossing guard or flashing lights. The speed limit is 35 mph in front of the school on Linebrook, but there is a posted School Zone speed limit in effect which requires drivers to slow to 20mph when passing the school during the hours of 8-9am and 2:30-3:30pm. These hours are posted in what an Ipswich police officer characterized as "tiny font" difficult for drivers traveling 35 mph to read. There are no flashing lights to draw attention to the sign.

Ipswich Middle School and High School

A large campus on High St at School St contains the Town's Middle School, serving students in grades 6-8, and High School in the same building. Only students who live within a 2 mile radius of the schools are eligible for bus transportation. Currently, five buses pick up about 300 Middle and High school students, leaving about 900 students who must find alternate transportation. There are many high school students who drive themselves and siblings to school, often Middle school students. The school has a student parking lot with X spots for this purpose. Some students who walk or bike may approach the school from School St rather than High St, where there is not a staff person greeting students, meaning that the estimates given in **Table 4-1** may be understated. Besides bicycles, several Middle school students use other forms of non-motorized transportation, such as skateboards and scooters.

The posted speed limit is X in front of the school, but there is a School Zone speed limit of 20 mph in effect during the hours of 7:30-8:30 am and 1:30-2:30 pm. The sign and the two driveway entrances have flashing lights, which helps draw the attention of drivers. There are two crosswalks, neither of which has a pedestrian-activated signal. Crossing children must wait for a break in traffic. Since Middle / High school is less than one mile from Winthrop Elementary on the same road (only the name changes), it is affected by the heavy morning traffic volume generated by that school. Afternoon traffic congestion tends to not be as bad, because many students participate in after-school activities like sports, and so departures are staggered over the afternoon hours.

5. RECOMMENDATIONS

This section proposes solutions to the issues identified in the previous sections of this document. Because these issues are complex and multi-faceted, three types of recommendations are given: Physical, Policy, and Programs. Improvements to infrastructure should be linked with other institutional and behavioral changes.

NOTE - This section is incomplete – these lists need refinement, and then will be fleshed out in more detail

5.1 Physical

- Build new multi-use trail along Argilla Rd to Crane Beach
- Widen shoulders on Linebrook, Topsfield, County Rd, Jeffreys Neck, and Pine Swamp roads, either by re-painting for narrower lane width, or adding pavement on edges
- Paint wide shoulders on Essex Rd approaching town
- Repair or build new sidewalks in populous residential areas with high traffic volume: Linebrook Rd, High St, County Rd, County St, East St, Topsfield Rd
- Re-paint key crosswalks in high-visibility cross-hatched pattern: in front of all schools, on County Rd at Argilla Rd and Essex Rd, at all Lord Square and Depot Square crossings, on High St at N. Main St
- Install signage to draw drivers' attention to these crosswalks – one sign a few yards before the crosswalk, and another at the crosswalk itself with an arrow
- Rather than "Share the Road" signs, install "Pass with Care" signs that include a bicycle icon. These signs should draw attention to the presence of bicycles on the road and urge safe behavior. These signs would be appropriate on: Topsfield Rd, Linebrook Rd, Argilla Rd, County Rd, High St, and Jeffreys Neck Rd
- Install new pedestrian-activated traffic signal on South Main St for Riverwalk users
- Install new pedestrian-activated traffic signal on County Rd at Argilla Rd
- Bicycle racks should be installed in locations convenient to town center and civic destinations. Those that need to be on sidewalks should allow 1-2 bikes to be parked parallel to the sidewalk (see Appendix 2 for a photo). Appropriate locations include: Ipswich Visitor Center, Town Hall, and Police Station, in front of Post Office, on Market St near Union St, near corners of Market and Central streets, and in front of any shop that requests a bike rack.
- Bicycle racks for 3-6 bikes should be installed at key parks, trailheads and beaches: Great neck beach, Strawberry Hill, Hamlin Reservation, Appleton Farms, Bradley-Palmer, Biolek Park, and Father Ryc playground
- Connectivity (network linking trails, multi-modal links, w/surrounding communities)
- Install traffic calming facilities on High St between North Main and Lord Square, around the Village Green area, and along County St (see Appendix 1, item T2-1 for more detail)

5.2 Policy

- Protect additional roads under Scenic Roads bylaw: Jeffreys Neck Rd, Little Neck Rd, River Rd, Town Farm Rd, Mile Ln
- Create Bicycle Pedestrian Advisory Committee to foster communication between Ipswich planning, police, and public works staff, and concerned citizens with relevant expertise for problem-solving in Ipswich and linking efforts with surrounding towns
- Site Plan and Design Review for inclusion bicycle and pedestrian facilities

5.3 Programs

- Share the Road
- Safe Routes to School

5.4 Potential Funding Sources

NOTE – This section will include more detailed narrative description

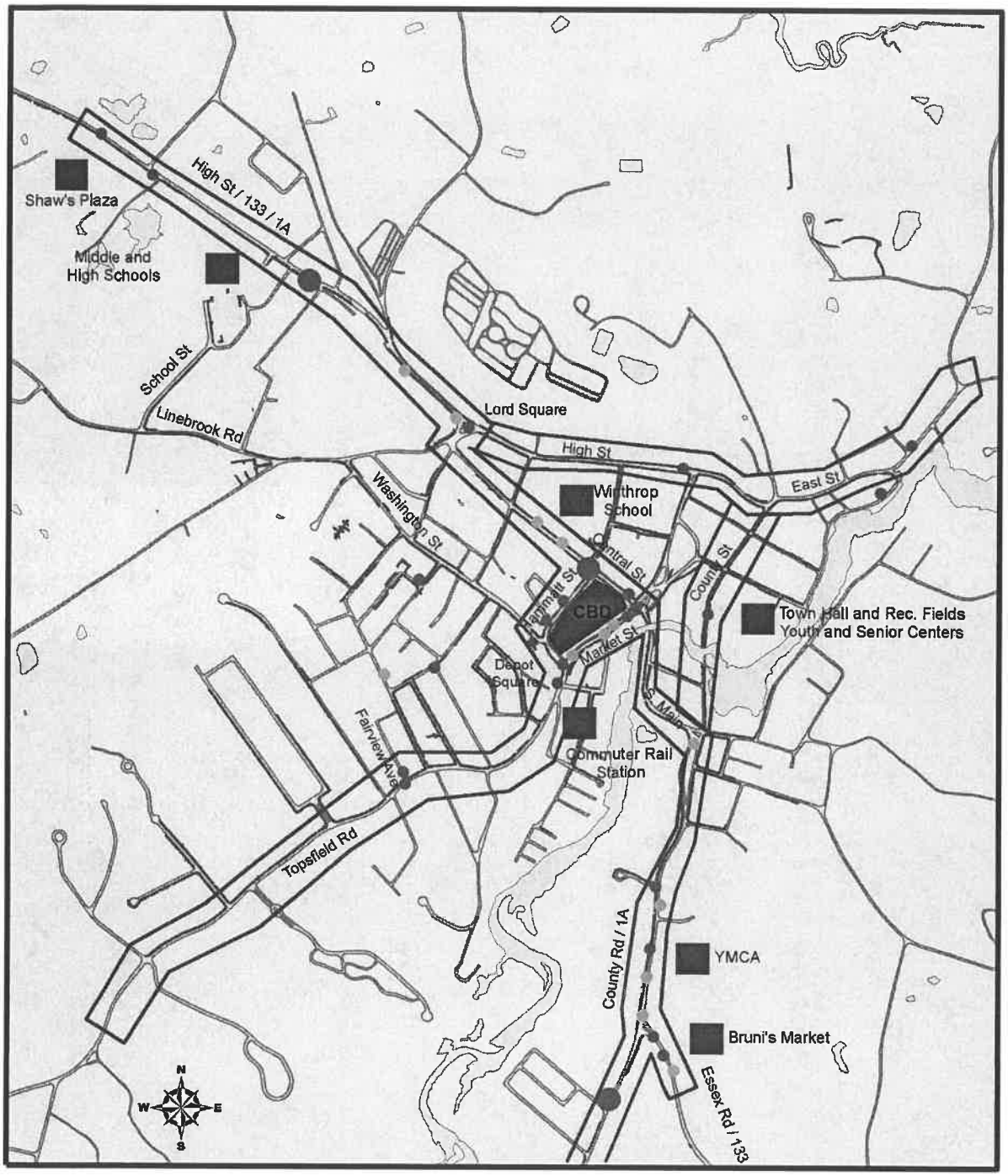
Federal

Transportation Enhancements funds for multi-use trail
Hazard Elimination funds (Chapter 90) for sidewalks, crosswalks, signage

State

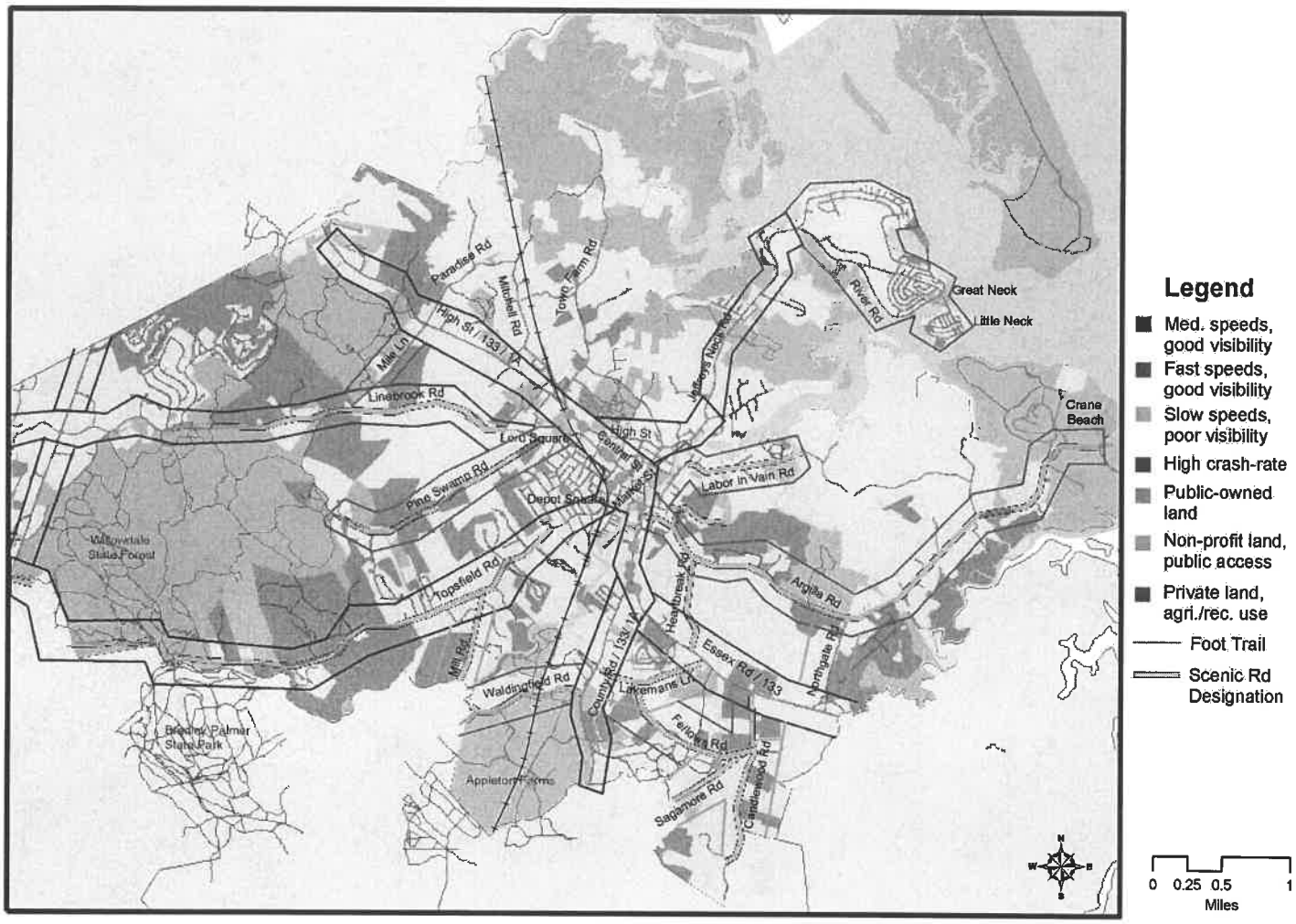
Potential - Safe Routes to School bill, if passed, will fund skills-trainings and safety events for children

Figure 2-1.
Locations of Bicycle and Pedestrian Crashes*, 1996-2005



*Only those crashes which occurred in the town center and were reported to the Ipswich Police are shown.

Figure 5-1.
Recommendations for Bicycles and Pedstrians



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John Hamilton, *Town of Hamilton Road Safety Committee and Conservation Committee*

APPENDIX 1 TRANSPORTATION IMPLEMENTATION PLAN[21]

Transportation Implementation Plan					
Item #	**Description**	**Responsibility**	**Importance**	**Time Frame**	**Notes**
TRANSPORTATION POLICY 1: Provide for safe and efficient roadways through limited infrastructure improvement projects and by adopting traffic regulations for new developments.					
T1-1	Traffic Analyses for Major Projects	Planning Bd.	Medium	Immediate	
T1-2	Site Plan Review Standards	Planning Bd.	Medium	Short-term	
T1-3	Study and Address "Problem" Intersections	DPW, Planning Dept., Town Meeting	Medium	Short-term	
TRANSPORTATION POLICY 2: Continue to develop the Town's transportation systems in a way that is compatible with the Town's character.					
T2-1	Traffic Calming Techniques/ Reduced Pavement Widths	DPW, Planning Dept., Selectmen	Medium	Short-term	
T2-2	Scenic Roads Bylaw	Planning Bd., Town Meeting	Low	Middle-term	
T2-3	Scenic Overlay District	Planning Bd., Town Meeting	Medium	Middle-term	
T2-4	Subdivision Road Standards	Planning Bd.	Medium	Short-term	
T2-5	Road Discontinuance and Closure	Selectmen, Town Meeting, DPW	Medium	Short-term	
T2-6	Internal Roads in Large Estates	Planning Bd.	Medium	Short-term	
TRANSPORTATION POLICY 3: Support non-automotive transportation modes including cycling and walking.					
T3-1	Trail System	Volunteers, DPW, Planning Dept.	Medium	Short-term	
T3-2	Support Bicycling	Volunteers, DPW	Medium	Middle-term	
T3-3	Sidewalk Construction	DPW, Town Meeting	High	Short-term	

[21] Adapted from the 2003 Ipswich Community Development Plan, p. 51-63.

TRANSPORTATION POLICY 4: Make the best use of existing parking downtown and provide additional parking, if necessary, to support downtown activities. Ensure that the Town's parking requirements are adequate for and consistent with the types of development that the Townwould like to attract.					
T4-1	Downtown Parking Management	Selectmen, Police	Medium	Short-term	
T4-2	Downtown Parking Lot	Selectmen	High	Immediate	
T4-3	Commuter Parking	Planning Dept., Selectmen, Town Meeting	Medium	Middle-term	
T4-4	Parking Regulations	Planning Bd.	Low	Middle-term	
TRANSPORTATION POLICY 5: Consider transportation factors when making local decisions related to planning, zoning, open space protection, and the siting of public facilities.					
T5-1	Siting New Development	Planning Bd., Open Space Committee	High	Immediate	
T5-2	Siting Public Facilities	Town Dept's, Town Meeting	Low	Middle-term	

TRANSPORTATION POLICY 2: Continue to develop the Town's transportation systems in a way that is compatible with the Town's character.

ACTION STEPS:

T2-1. Traffic Calming Techniques/Reducing Pavement Widths: Traffic calming measures include a range of strategies to slow down traffic and deter the use of local residential roads for through traffic. The goal of these measures is to preserve neighborhood quality and protect the safety of area residents. Strategies might include one-way streets, narrow streets, neckdowns, narrow travel lanes, on-street parking, or speed humps. Daylor and Bruce Campbell & Associates examined the following three street segments with regard to traffic calming needs and pavement widths. Before any traffic calming measures are implemented, the Town should examine their potential impacts on emergency services and snow removal.

- **High Street:** The section of High Street from North Main Street to Lords Square is excessively wide, encouraging motorists to speed along its length. The Town could take several different approaches to traffic calming here. For example, a raised planted strip could be constructed in the center of the road or along one sidewalk; the road could be striped for parking spaces; a double yellow line could be painted down the center of the road in the section where it is lacking now; or no action could be taken. From a traffic engineering standpoint, there is no single right answer for this street. Therefore, the guidance of local residents is essential in determining which traffic calming actions, if any, the Town should undertake here.

- **North Main Street/Meetinghouse Green:** Portions of these streets have excessively

wide pavement. One such area is right in front of the First Church of Ipswich on North Main Street. As much of this pavement appears to be unnecessary, the Town should consider reducing the width of these streets and instead using the land to extend the green areas and islands along this street. Some of this work has already been planned and programmed for the near future.

- **County Street:** Although this street carries a significant amount of traffic to and from Jeffreys Neck, field investigations did not reveal a serious problem with speeding traffic here. Therefore, no action is recommended at this time.

T2-2. Scenic Roads Bylaw: Narrow, tree-lined roadways help to define the Town's character and many residents would like to retain this character and preserve the Town's many scenic roads. While the Town recently improved the protections in its Scenic Roads Bylaw, no additional scenic roads were added. Several additional road segments that are not yet designated as scenic have nevertheless been identified as contributing significantly to the Town's character (e.g. Jeffrey's Neck Road). These roads should be considered for Scenic Road designation. It should be noted that state law does not allow numbered state highways to be designated as scenic roads.

TRANSPORTATION POLICY 3: Support non-automotive transportation modes including cycling and walking.

ACTION STEPS:

T3-1. Trail System: The Essex County Trail Association recently completed a map identifying the publicly accessible trails in Ipswich. The Town can use this map as a starting point from which to add additional trails to the Town's system. Two short-term action steps are suggested.

a. First, the Town should continue to study the feasibility of building a bicycle/walking path along Argilla Road from County Road to Crane Beach. Such a trail would probably be heavily used in the summer, when Crane Beach attracts thousands of visitors on peak days. Although local volunteers have already begun to evaluate the feasibility of such a trail, additional work is needed to coordinate with affected landowners and identify a trail route that is sensitive to constraints such as wetlands, shade trees, stone walls, driveways, and private property.

b. Second, the Town should use the subdivision review process as an opportunity to provide multi-use trails that link new developments to destinations such as schools, shopping areas, the downtown, and other nearby trails. These trails may provide a viable alternative to sidewalks in the more rural areas of the Town. The Planning Board should consider whether the Subdivision Rules and Regulations should be modified to require multi-use trails where appropriate.

T3-2. Support Bicycling: The Town should support bicycling as a safe alternative to driving by providing more bike racks at key destination locations, such as the downtown and the commuter rail station. The Town should also work to develop an on-street cycling network by adopting a "Share the Road" program. Only roads deemed safe and appropriate for cycling should be included in the network. Potential roadways should be evaluated to determine their suitability for cycling based on traffic volume, road width,

sight distances, and the vertical profile of the road. Once a road has been designated an official bicycle route, cyclists will come to perceive the road as being safe for bicycling. The Town must confirm that this is in fact the case before encouraging additional cycling on the route. The following are some potential cycling routes that the Town may want to study: Jeffreys Neck Road, Little Neck Road, Labor In Vain Road, Argilla Road, Northgate Road, Heartbreak Road, Candlewood Road, Sagamore Road, Fellows Road, Lakemans Lane, Waldingfield Road, Mill Road, and Topsfield Road.

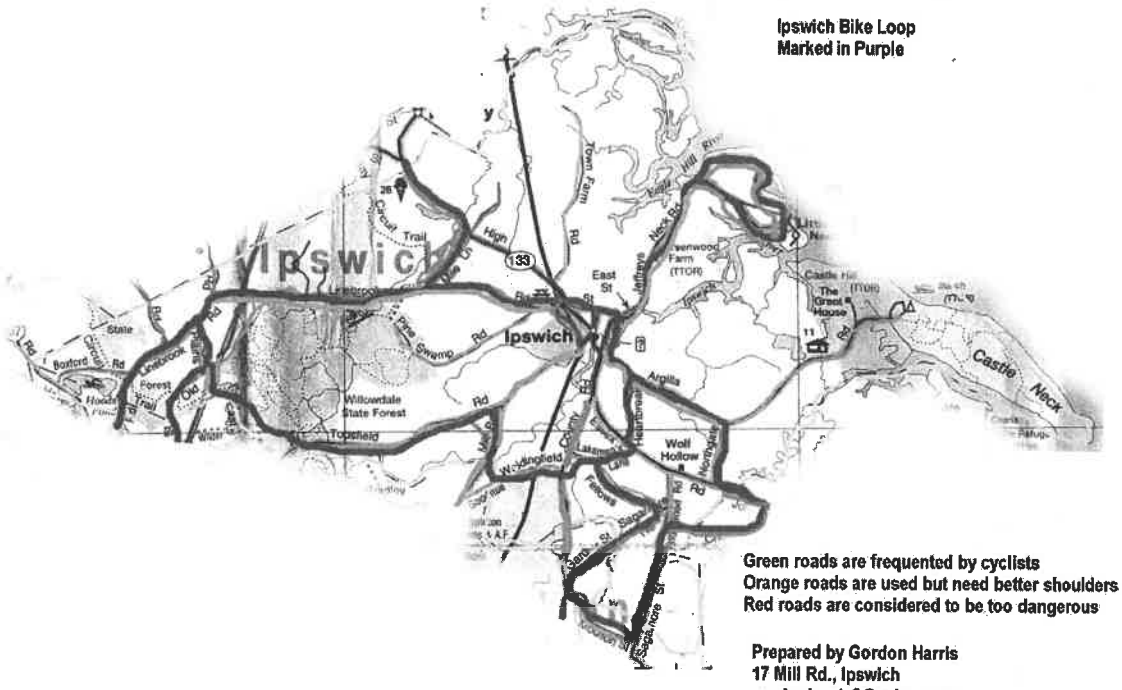
Once the Town has studied and selected roads to include in the cycling network, a townwide "Bicycle Route" sign can be designed, created, and posted on the designated roads as appropriate. Another component of a Share the Road program is to promote awareness of cyclists' rights and responsibilities through education and outreach efforts.

T3-3. Sidewalk Construction: The Town should seek to construct and maintain sidewalks in the higher density areas adjacent to the downtown, including the proposed Village Incentive (VI) district. In addition, sidewalks should be constructed near and around schools, providing students with the opportunity to walk to school. In general, sidewalks should be provided within ¾ mile of the elementary schools and within 1 mile of the middle school and high school. The Town does not currently offer school bus service to elementary school students who live within ¾ mile of their school or to middle school or high school students who live within 2 miles of their school.

APPENDIX 2. ILLUSTRATIONS OF SIGNS AND FACILITIES

NOTE – photos of suggested signs, bike racks, or other physical treatments will be included in this section

Ipswich Cycling Roads



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